SUPPORT FOR THE AMENDMENTS

The present amendment cancels claims 10, 11 and 19-28, and amends claim 9.

Support for the amendment to claim 9 is found at specification page 8, lines 10-25, page 9, lines 1-25, page 14, lines 6-25, page 15, lines 17-20, and page 48, lines 5-12.

It is believed that these amendments have not resulted in the introduction of new matter.

REMARKS

Claims 9 and 12-18 are currently pending in the present application. Claims 10, 11 and 19-28 have been cancelled, and claim 9 has been amended, by the present amendment.

The rejections of claims 9-18 under 35 U.S.C. §§ 102(b) and/or 103(a) as being anticipated and/or obvious over each of Abe (U.S. Patent 5,218,048) and Iwata (U.S. Patent 5,430,080) are respectfully traversed in part and obviated by amendment in part, with respect to claims 9 and 12-18.

Amended claim 9 recites a thermoplastic resin composition comprising: 70-90 wt. % of an olefin polymer (1A) comprising olefins having 2 to 6 carbon atoms as main units; and 10-30 wt. % of a higher α-olefin polymer (3) comprising 80-100 mol % of an α-olefin having 10 or more carbon atoms, wherein the higher α-olefin polymer (3) has a *stereoregularity index M2 of 50-85 mol %* and a *single melting point (T_m) of 0°C to 100°C.*

Applicants respectfully submit that the Examiner has failed to meet the burden of establishing a *prima facie* case of anticipation and/or obviousness with respect to the claim limitations of the higher α-olefin polymer having a stereoregularity index M2 of 50-85 mol % and a single melting point (Tm) of 0-100°C.

Abe and Iwata, when considered alone or in combination, fail to disclose or suggest that the α-olefin polymers described therein have a stereoregularity index M2 of 50-85 mol % and a single melting point (T_m) of 0°C to 100°C.

Applicants have discovered that the claimed higher α-olefin polymer having a stereoregularity index M2 of 50-85 mol % and a single melting point (T_m) of 0°C to 100°C may be produced with a polymerization metallocene catalyst represented by the general formulae (I) and (II) (See e.g., page 6, lines 8-13 and 18, page 16, lines 1-11 and 16, page 20, lines 21-25, page 21, line 1, claims 16 and 17).

In contrast, Abe and Iwata fail to disclose or suggest that the α-olefin polymers described therein are produced with the polymerization metallocene catalyst represented by the general formulae (I) and (II). Accordingly, there is no reasonable basis for a skilled artisan to conclude that the α-olefin polymers described in Abe and Iwata would have a stereoregularity index M2 of 50-85 mol % and a single melting point (T_m) of 0°C to 100°C, as claimed in claim 9.

As a result, Abe and Iwata, when considered alone or in combination, fail to anticipate or render obvious the thermoplastic resin composition of the present invention comprising the claimed higher α-olefin polymer having a stereoregularity index M2 of 50-85 mol % and a single melting point (T_m) of 0°C to 100°C.

Assuming *arguendo* that sufficient motivation and guidance is considered to have been provided by Abe and/or Iwata to direct a skilled artisan to incorporate into the thermoplastic resin compositions described therein the claimed higher α-olefin polymer having a stereoregularity index M2 of 50-85 mol % and a single melting point (T_m) of 0°C to 100°C, which is clearly not the case, such a case of obviousness is rebutted by a showing of superior properties and secondary considerations.

As discussed in the present specification, traditional thermoplastic resin compositions comprising higher α-olefin polymers polymerized using conventional Ziegler-Natta catalysts suffer from inferior properties with respect to decreased film impact resistance and reduced miscibility between the higher α-olefin polymers and the thermoplastic resins (See e.g., page 2, lines 16-25, page 3, lines 1-17, page 4, lines 4-10). Accordingly, there has been a long-felt need to provide a thermoplastic resin composition comprising a higher α-olefin polymer that exhibits increased film impact strength and improved miscibility between the higher α-olefin polymer and the thermoplastic resin. Based on the limited disclosures of Abe and Iwata, and the traditional thermoplastic resin compositions described therein, other skilled artisans have failed to discover a solution to this long-felt need.

As shown in Tables 1 and 2 below, which compile into tabular form the comparative experimental data presented in the previously submitted 37 C.F.R. § 1.132 Declaration, Applicants have discovered that a thermoplastic resin composition comprising a higher α-olefin polymer polymerized using a metallocene catalyst and having a stereoregularity index M2 of 50-85 mol % and a single melting point (T_m) of 0°C to 100°C in accordance with the present invention exhibits superior properties with respect to increased film impact resistance and improved miscibility between the higher α-olefin polymer and the thermoplastic resin.

Table 1

	Higher α-Olefin Polymer	Catalyst	Stereoregularity Index M2 (mole %)	Melting Point(s) (°C)
Ex. 3	Polymer (1)	Metallocene	60.4	41.5
Ex. 4	Polymer (2)	Metallocene	50.8	40
Comp. Ex. 3	Polymer (3)	Ziegler-Natta	91.8	36.9 and 68.1
Comp. Ex. 4	Polymer (4)	Ziegler-Natta	87.2	35.1 and 66.1

The higher α-olefin polymer (1) of Example 3, which was polymerized using a metallocene catalyst, has a stereoregularity index M2 of 60.4 mole % and a single melting point (Tm) of 41.5°C in accordance with the claimed higher α-olefin polymer of the present invention. The higher α-olefin polymer (2) of Example 4, which was polymerized using a metallocene catalyst, has a stereoregularity index M2 of 50.8 mole % and a single melting point (Tm) of 40°C in accordance with the claimed higher α-olefin polymer of the present invention.

Unlike the claimed higher α-olefin polymer of the present invention, the higher α-olefin polymer (3) of Comparative Example 3, which was polymerized using a conventional Ziegler-Natta catalyst, has a stereoregularity index M2 of 91.8 mole % and two melting points (Tm) of 36.9°C and 68.1°C. Unlike the claimed higher α-olefin polymer of the present invention, the higher α-olefin polymer (4) of Comparative Example 4, which was polymerized using a conventional Ziegler-Natta catalyst, has a stereoregularity index M2 of 87.2 mole % and two melting points (Tm) of 35.1°C and 66.1°C.

Table 2	Thermoplastic Resin		Higher α-Olefin Polymer		Miscibility	Film Impact Strength
	Type	wt. %	Type	wt. %	(R)	(kJ/M)
Ex. 3	Polypropylene	70.0	Polymer (1)	30.0	1.14	6.9
Ex. 4	Polypropylene	70.0	Polymer (2)	30.0	1.15	6.8
Comp. Ex. 3	Polypropylene	70.0	Polymer (3)	30.0	1.06	2.8
Comp. Ex. 4	Polypropylene	70.0	Polymer (4)	30.0	1.07	2.6

As shown by the comparative experimental data presented in Table 2, the thermoplastic resin compositions comprising the higher α-olefin polymer (1) of Example 3 and the higher α-olefin polymer (2) of Example 4, which were polymerized using a metallocene catalyst and have a stereoregularity index M2 and a single melting point in accordance with the claimed higher α-olefin polymer of the present invention, exhibit superior properties with respect to increased film impact resistance and improved miscibility between the higher α-olefin polymer and the thermoplastic resin, as compared to the inferior properties exhibited by the traditional thermoplastic resin compositions comprising the higher α-olefin polymer (3) of Comparative Example 3 and the higher α-olefin polymer (4) of Comparative Example 4, which were polymerized using a conventional Ziegler-Natta catalyst and have two melting points.

This evidence clearly demonstrates that a thermoplastic resin composition comprising a higher α-olefin polymer polymerized using a metallocene catalyst and having a stereoregularity index M2 and a single melting point in accordance with the claimed higher α-olefin polymer of the present invention exhibits superior properties with respect to increased film impact resistance and improved miscibility between the higher α-olefin polymer and the thermoplastic resin, as compared to the inferior properties exhibited by a traditional thermoplastic resin composition comprising a higher α-olefin polymer polymerized using a conventional Ziegler-Natta catalyst and having two melting points.

The Examiner has dismissed the comparative experimental data presented in the previously submitted 37 C.F.R. § 1.132 Declaration because the Examiner is of the opinion that a direct comparison has not been made between the thermoplastic resins of Abe and Iwata and the thermoplastic resin composition of the present invention comprising the claimed higher α-olefin polymer.

Abe and Iwata are completely silent as to what particular catalysts are used for producing the α-olefin polymers described therein. As a result, it is impossible to carry out a direct comparison between the claimed higher α-olefin polymers of the present invention and the α-olefin polymers of Abe and Iwata, as required by the Examiner, due to the limited disclosures of these cited references.

Based on established U.S. case law, as recited in MPEP § 716.02(e), Applicants may compare the claimed invention with prior art that is more closely related to the invention than the prior art relied upon by the examiner. See e.g., *In re Holladay*, 199 USPQ 516 (CCPA 1978); and *Ex parte Humber*, 217 USPQ 265 (Bd. App. 1961).

Accordingly, the α-olefin polymers of Comparative Examples 3 and 4, which were produced with a conventional Ziegler-Natta catalyst, as set forth in the previously submitted § 1.132 Declaration, provide a closer comparison to the higher α-olefin polymers of Examples 3 and 4, which were produced with a polymerization metallocene catalyst in accordance with the present invention, than the α-olefin polymers disclosed in Abe and Iwata, which are completely silent as to what particular catalysts are used for producing the same.

Withdrawal of these grounds of rejection is respectfully requested.

Applicants respectfully request that the provisional obviousness-type double patenting rejection of claims 9-18 over claims 1 and 3-9 of copending application number 10/577,496 (Sera U.S. 2007/0079825) be held in abeyance until allowable subject matter in the present application is indicated.

In conclusion, Applicants submit that the present application is now in condition for allowance and notification to this effect is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon

David P. Stitzel
Attorney of Record
Registration No. 44,360

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)